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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
HOANG, THAI D	
ART UNIT	**PAPER NUMBER**
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/079,107	KIM ET AL.	
	Examiner	Art Unit	
	Thai D. Hoang	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 June 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-8 and 13-16* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-8 and 13-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *6/25/2007*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., In re Berg, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); In re Goodman, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); In re Longi, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); In re Van Ornum, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); In re Vogel, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and In re Thorington, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

(i) Claims 1-4 and 13-14 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-18 of copending Application No. 10/071903. Although the conflicting claims are not identical, they are not patentably distinct from each other because the limitations recited in claims

1-4 and 13-14 are the same limitations recited in claims 1-4 and 13-14, respectively, of copending Application No. 10/071903, but they have different preambles.

(ii) Claims 1-4 and 13-14 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-18 of copending Application No. 10/071917. Although the conflicting claims are not identical, they are not patentably distinct from each other because the limitations recited in claims 1-4 and 13-14 are the same limitations recited in claims 1-4 and 13-14, respectively, of copending Application No. 10/071917, but they have different preambles.

(iii) Claims 5-8 and 15-16 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-12 of copending Application No. 10/077076. Although the conflicting claims are not identical, they are not patentably distinct from each other because the limitations recited in claims 5-8 and 15-16 are the same limitations recited in claims 1-4 and 9-10, respectively, of copending Application No. 10/077076, but they have different preambles.

(iv) Claims 5-8 and 15-16 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-12 of copending Application No. 10/077565. Although the conflicting claims are not identical, they are not patentably distinct from each other because the limitations recited in claims 5-8 and 15-16 are the same limitations recited in claims 1-4 and 9-10, respectively, of copending Application No. 10/077565, but they have different preambles.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 5-8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 5, lines 3-4, recited, "a first and second antenna for transmitting said data field of symbols wherein said data field includes a first data field;" it indicates both antennas transmit the same data field of symbols. However, figure 2 shows the data field of symbols transmit at the antennas 15 and 16 are different, the data field of symbols D_1 and D_2 are transmitted at antenna 15, and $-D^*_2$ and D^*_1 are transmitted at the antenna 16. Furthermore, lines 5-6 recited, "an encoder for encoding said data field producing a second data field having complex conjugates of the symbols of said data field;" it indicates the encoder encodes all of data fields D_1, D_2, $-D^*_2$ and D^*_1. It is confusing the word "said data field" recited in the claim.

Claims 6-8 are rejected because they depend on rejected claim 5.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

(i) Claims 1 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dabak et al, US Patent No. 6,775,260 B1, in view of Ylitalo et al, US Patent No. 6,788,661 B1, hereinafter referred to as Dabak '260 and Ylitalo respectively.

Regarding claim 1, Dabak '260 discloses a system called "Space time block coded transmit antenna diversity for WCDMA". Dabak teaches the system, see figs. 1-2 and col. 4, lines 9-52, comprising:

generating data symbols S input at 106 (generating a first data field of symbols);

a space time transmit diversity (STTD) encoder 110 produces complex conjugate symbols S* from the input data symbols S (encoding said first data field producing a second data field having complex conjugates of the symbols of said data field);

transmitting data symbols of S and S^* over a first and second antennas ANT1 112 and ANT2 114. See fig. 1 (transmitting an RF signal including said first and second spread data fields over a first and second antenna.)

Dabak '260 does not disclose the data symbols S are spread using a first channelization code that is uniquely associated with a first antenna and the data symbols S^* are spread using a second channelization code. However, Ylitalo discloses "Adaptive beam-time coding method and apparatus." The apparatus comprises a first orthogonal code (OC) associated with a first antenna (fig. 4, 16; fig. 5, 106), and a second orthogonal code associated with a second antenna (fig. 4, 18; fig. 5, 108) for transmission data. See figs. 4-5, col. 4, lines 56-58, and col. 5, lines 37-40. Thus, according to the *KSR International Co. v. Teleflex Inc., 550 U.S., 82 USPQ2d 1385, 2007*, it would have been obvious to one of ordinary skill in the art at the time the

invention was made to adapt the first and second orthogonal codes disclosed by Ylitalo into Dabak's system in order to reduce interferences RF data signals.

Regarding claim 5, as best understood, Dabak '260 discloses the system comprising:

a first and second antennas 112 and 114 for transmitting data symbols, wherein the data symbols comprises S data symbols (a first and second antenna for transmitting said data field of symbols, wherein said data field includes a first data field);

an encoder 110 for encoding S data symbols to produce a S^* (an encoder for encoding said data field producing a second data field having complex conjugates of the symbols of said data field);

Dabak '260 does not disclose the system comprises a first channelization device for receiving the data field including the first data field and spreading said first data field, wherein said first channelization device spreads said first data field using a first channelization code that is uniquely associated with the first antenna; and comprises a second channelization device for receiving the second data field from the encoder and spreading said second data field using a second channelization code, the second channelization code being uniquely associated with the second antenna. However, Ylitalo discloses "Adaptive beam-time coding method and apparatus." The apparatus comprises a first orthogonal code (OC) associated with a first antenna (fig. 4, 16; fig. 5, 106), and a second orthogonal code associated with a second antenna (fig. 4, 18; fig. 5, 108) for transmission data. See figs. 4-5, col. 4, lines 56-58, and col. 5, lines 37-40. See *KSR International Co. v. Teleflex Inc., 550 U.S., 82 USPQ2d 1385, 2007.* It would have

been obvious to one of ordinary skill in the art at the time the invention was made to adapt the first and second orthogonal codes disclosed by Ylitalo into Dabak's system in order to reduce interferences RF data signals.

(ii) Claims 2-4 and 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dabak '260 and Ylitalo as shown above, and further in view of Akiba et al, US Patent No. 6,721,300 B1, hereinafter referred to as Dabak '260, Ylitalo and Akiba respectively.

Regarding claims 2 and 6, both Dabak '260 and Ylitalo do not disclose the system comprises a first and second scrambling devices for scrambling the first and second spread data fields by a single scrambling code associated with the transmitter. However, Akiba discloses STTD encoding method and diversity transmitter, wherein the transmitter (fig. 1) comprises scrambler 114 and 116 that multiply a scrambling code to the data transmission. See fig. 1, col. 4, lines 11-14. It would have been obvious to one of ordinary skill in the art at the time the invention was made to adapt scrambling code disclosed by Akiba into Dabak '260 system in order to protect data transmission in the network.

Regarding claims 3 and 7, Dabak '260 discloses that the data symbols S comprise a sub-data S_1 and a sub-data S_2. See figure 1 (wherein the symbols of said first data field of symbols are grouped into a first and second sub-data field.)

Regarding claims 4 and 8, Dabak '260 discloses the STTD encoder 110 encodes the sub-data S_1 to produce a complex conjugate S_1^*, and the sub-data S_2 to produce a negative complex conjugate $-S_2^*$. See figure 1 (wherein the symbols of said second

data field of symbols are grouped into a third and fourth sub-data field, wherein said third sub-data field is the negative complex conjugate of said second sub-data field and said fourth sub-data field is the complex conjugate of said first sub-data field.)

(iii) Claims 13 and 15 are rejected under 35 U.S.C. 102(e) as being anticipated by Dabak et al, US Patent No. 6,594,473 B1, hereinafter referred to as Dabak '473.

Regarding claims 13 and 15, Dabak '473 discloses a wireless system with transmitter having multiple transmit antennas. The system comprising the steps of:

generating data symbols S_1. See figure 4 (generating a data field of symbols, wherein said data field includes a first data field);

spreading the data symbol S_1 using a first Wash code W_1 producing W_1S_1. See fig. 4 (spreading said first data field using a first channelization code producing a first spread data field);

spreading the data symbol S_1 using a second Wash code W_2 producing W_2S_1. See fig. 4 (spreading said first data field using a second channelization code producing a second spread data field);

wherein W_1 associated with an antenna AT1, and W_2 associated with an antenna AT3 (each channelization code being uniquely associated with one of a first and second antennas);

transmitting W_1S_1 and W_2S_1 over the antennas AT1 and AT3. See figure 4 (transmitting an RF signal including said first and second spread data fields over a first and second antenna.)

Dabak '473 discloses the first channelization code associates with antennas 1 and 2, and the second channelization code associates with antennas 3 and 4, i.e each of the channel codes is not uniquely associated with the first or the second antennas. See *KSR International Co. v. Teleflex Inc., 550 U.S., 82 USPQ2d 1385, 2007.* It would have been obvious to one of ordinary skill in the art at the time the invention was made to reduce time delay for processing data symbols by simplifying diversity antenna system disclosed by Dabak '473 from 4 to 2 antennas.

(iv) Claims 14 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dabak '473 as shown above, in view of Akiba et al, US Patent No. 6,721,300 B1, hereinafter referred to as Dabak '473 and Akiba respectively.

Regarding claims 14 and 16, Dabak '473 does not disclose the system comprises a first and second scrambling device for scrambling the first and second spread data fields by a single scrambling code associated with the transmitter. However, Akiba discloses STTD encoding method and diversity transmitter, wherein the transmitter (fig. 1) comprises scrambler 114 and 116 for multiplier a scrambling code to the data transmission. See fig. 1, col. 4, lines 11-14. It would have been obvious to one of ordinary skill in the art at the time the invention was made to adapt scrambling code disclosed by Akiba into Dabak '473 system in order to protect data transmission in the network.

Response to Arguments

Applicant's arguments with respect to claims 1-8 and 13-16 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is field within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thai D. Hoang whose telephone number is (571) 272-3184. The examiner can normally be reached on Monday-Friday 10:00am-6:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi Pham can be reached on (571) 272-3179. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/T.H./

CHI PHAM
SUPERVISORY PATENT EXAMINER 8/13/07